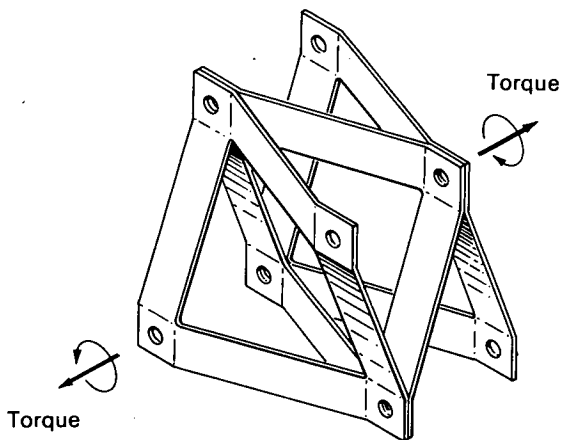


# NASA TECH BRIEF



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## Mechanical Characteristics of the Bossler Coupling



An analytical and experimental study has resulted in a comprehensive understanding of the mechanical properties and possible modes of failure of the Bossler coupling. This device is a flexible driveshaft coupling that can accommodate inevitable misalignments between rotating shafts in a drive train and enables a large torque to be transmitted at high rpm.

This study, covered in a report cited in the note, includes the development of simplified coupling analysis methods, design guidelines, and the framework for understanding test results from the standpoint of theory. Experimental test data substantiated the analysis for predicting internal forces and moments, steady and alternating stress, bending and change-

of-length stiffness, critical speeds, and the effects of imbalance.

In summary, the test and evaluation results indicate the Bossler coupling has the following desirable mechanical features: Unusual capability for accommodating combined axial motion, misalignment, and torque; suitability for applications requiring long life combined with reliability, light weight, and minimal maintenance; and the ability to survive shock-torque greatly in excess of ultimate continuous torque.

### Note:

The following documentation may be obtained from:

Clearinghouse for Federal Scientific  
and Technical Information  
Springfield, Virginia 22151  
Single document price \$3.00  
(or microfiche \$0.65)

Reference: NASA-CR-1241 (N69-16104),  
The Bossler Coupling

### Patent status:

The Bossler coupling is covered by U.S. Patent No. 3,177,684 owned by Kaman Corporation.

Source: R. J. Mayerjak and R. B. Bossler, Jr. of  
Kaman Corporation  
under contract to  
NASA Headquarters  
(HQN-10508)

Category 07